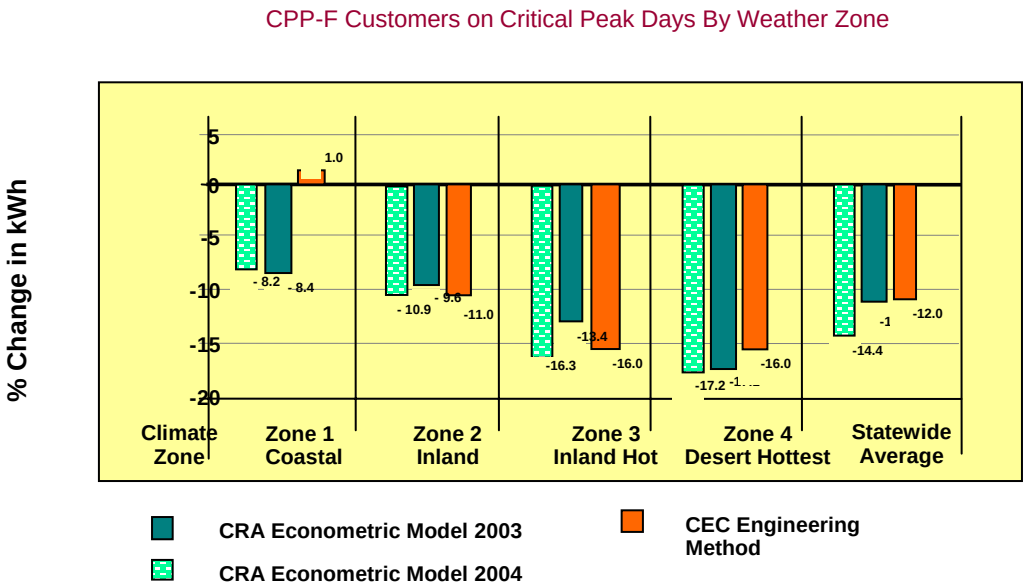
Demand Response

- *Errata*
- Demand Response Goals
- Counting DR toward resource requirements requires a higher level of certainty than has been used in the DR proceeding
- DR goals will not be met in the short term
- Challenges
- Measurement and Verification Issues
- Research and Development Issues
- Recommendations

Errata 1

Figure 13. Percent Change in Peak Period Energy Use

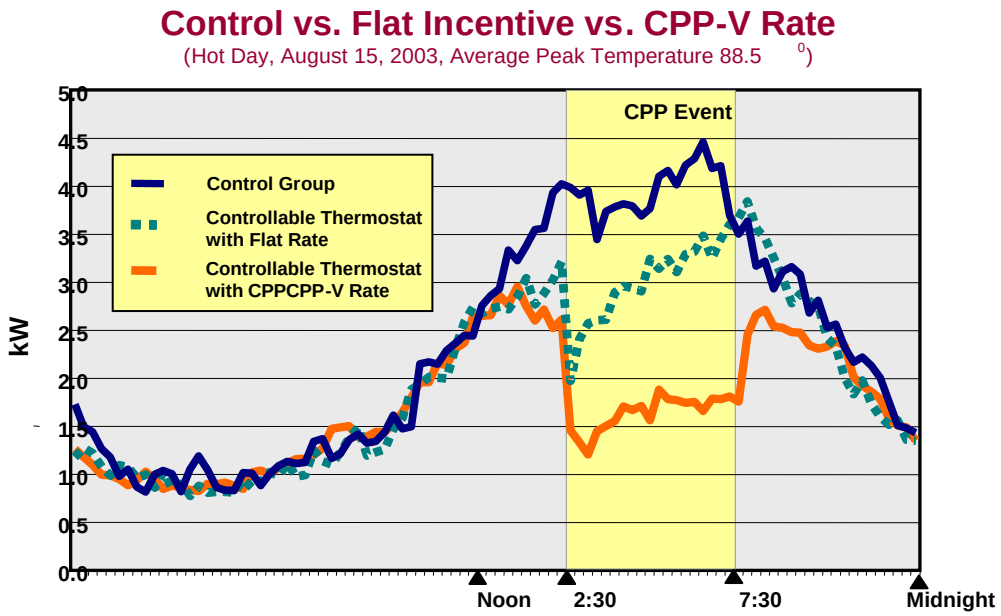


Source: Statewide Pricing Pilot, Summer 2003 Impact Analysis, Charles River Associates, August 9, 2004, Table 5-4; California's Statewide Pricing Pilot: Update of Results, Charles River Associates, January 7, 2005, Slide 4.

Figure 13 shows the fractional load reduction estimated for residential customers on the CPP-F rates using three different calculation methods. The two "CRA Statistical" methods are designed to both account for usage differences observed within the sample and for slight differences between the sample and the general population.

Errata 2

Figure 14 Residential Response



Source : Response of Residential Customers to Critical Peak Pricing and Time -of-Use Rates during the Summer of 2003, September 13, 2004, CEC Report.

The savings estimates in Figure 14 are not directly comparable to the results in Figure 13 because they use different techniques for correcting results to reflect differences between the participant and control groups. This is because analysts within the proceeding disagreed on both the quality of the data used to correct for differences in pre-treatment energy use and whether some or all of these differences could be attributed to self-selection bias.

Demand Response Goals were set in the Demand Response Proceeding and included in the Procurement Proceeding

- Demand Response goals, originally set in 2003, called for progress toward 5% of system peak by 2007
- December 2004 Procurement Decision directed the IOUs to include the DR, at the goal level, in the resource stack
- January 2005 Decision clarified that only price-responsive programs and tariffs (*not reliability programs)* count toward meeting the goals

Counting DR toward resource requirements requires a higher level of certainty than has been used in the DR proceeding

- **Enrolled MW** reflects the maximum possible demand response available from customers enrolled in existing programs. *(Currently used to measure progress toward meeting the goals)*
- **Demonstrated MW** refers to actual performance data *(which are currently very limited)*
- **Expected MW** refers to the IOUs' best estimates, using a variety of input including enrollment, actual performance, and customer input.

Progress Toward Demand Response Goals as of April, 2005

	2004 Goals (MW)	*Revised 2004 goals (MW)*	*2005 Goals (MW)*	*Enrolled MW April 2005*	*Expected MW April 2005*
PG&E	400	343	450	370.8	252
SCE	400	141	628	150.3	104
SDG&E	80	47	125	34.6	13
Total	*880*	*531*	*1203*	*555.7*	*369*

Measurement and Verification Issues

- Develop methodology for valuing Demand Response and establish standardized methodologies for estimating cost-effectiveness of DR measures—parallel to the Standard Practice Manual tests for Efficiency
- Lack of experience with price-sensitive Demand Response contributes to uncertainty among resources planners, and a tendency to be conservative in including DR in procurement
- Integration of DR and Efficiency is good for customers, but difficult to measure and assign attribution for cost-effectiveness testing
- Including DR into Energy Commission forecasting methodologies will require a more detailed understanding of customer response under various conditions—Hourly load data from IOU customers will be needed
- Improve understanding of customer impacts as an input to policy decision-making

Research and Development Issues

- Moving toward default dynamic rates will require development of support programs, including education, technical assistance and technology incentives to aid customers in adapting to the new rates
- R & D of automated demand response technologies should be expanded
- R & D to support integration of DR, EE and Renewables, especially for small customer applications is needed

Challenges to meeting the Demand Response Goals

- Current DR programs are only available to large customers who have advanced meters (~20% of peak demand)
- Voluntary programs have limited potential
- Plowing new ground; customers are skeptical and need more experience

Recommendations

- Clarify methodology for counting MW toward DR goals; adjust goals as necessary to reflect the method
- Expand participation in large customer DR by developing a default Critical Peak Pricing rate with options to remain on the otherwise applicable tariff
- Expand Advanced Metering Infrastructure to allow all customers to participate in and benefit from DR programs and tariffs